Repair

GrindLazer™

Patents Pending

3A0102C
EN

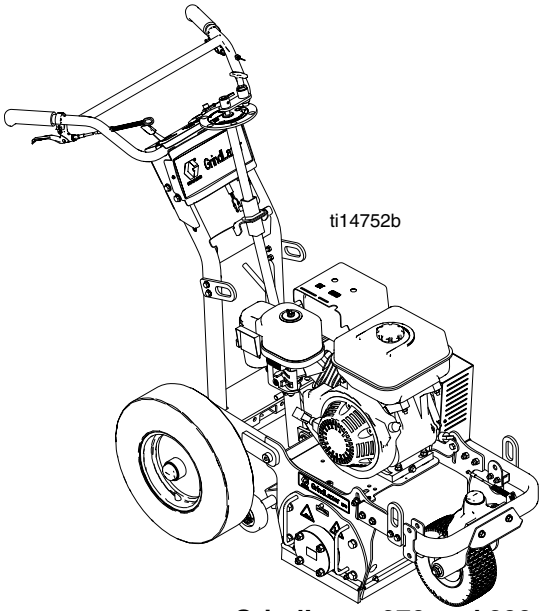
- Designed to grind flat, horizontal concrete or asphalt surfaces -
- For removal of materials from concrete and asphalt surfaces -
- Professional outdoor use only -

Model 571002 - Forward cut
GrindLazer 270 (270 cc / 9 hp)

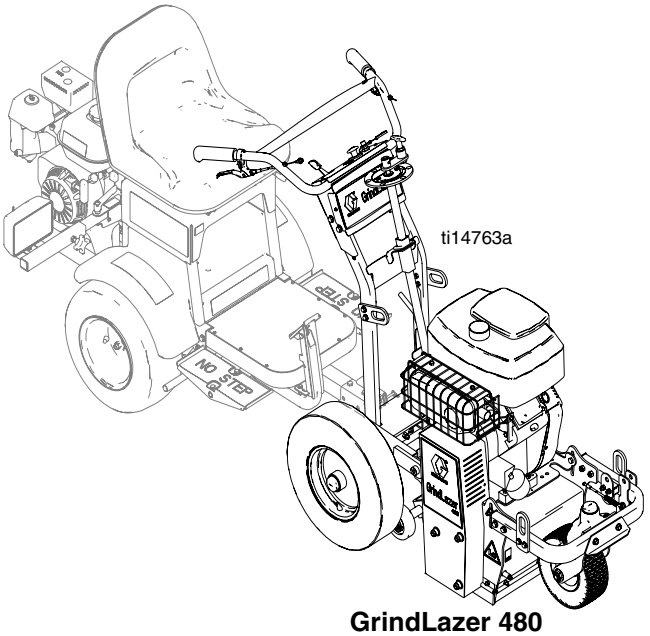
Model 571003 - Forward cut
GrindLazer 390 (390 cc / 13 hp)

Model 571004 - Reverse up-cut (Must be used with LineDriver™)
GrindLazer 480 (480 cc / 16 hp)

IMPORTANT SAFETY INSTRUCTIONS
Read all warnings and instructions in this manual. Save these instructions.



GrindLazer 270 and 390



GrindLazer 480

Related Manuals:
Operation - 3A0101
Parts - 3A0103

(Drums, cutters, and LineDriver™ sold separately)

CE

PROVEN QUALITY. LEADING TECHNOLOGY.

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Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

⚠ WARNING

DUST AND DEBRIS HAZARD

Use of this equipment to grind concrete and other paving materials can result in the release of potentially harmful dust or chemicals from the materials.

- For use only by sophisticated users familiar with applicable governmental safety and industrial hygiene regulations.
- Use equipment only in a well-ventilated area.
- Wear a properly fit-tested and government approved respirator suitable for the dust conditions.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not leave the work area while equipment is energized. Turn off all equipment when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your distributor for information.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.
- Maintain a safe operating distance from other people in the work area.
- Avoid any pipes, columns, openings, or any other objects protruding from work surface.

MOVING VEHICLE HAZARD

Careless and reckless behavior causes accidents. Falling from vehicle, running into people or object, or being struck by other vehicles may result in serious injury or death.

- Do not step on forward/reverse pedals.
- Make turns slowly. Do not make turns greater than 45°.
- Loss of traction may occur going downhill. Do not operate on slopes greater than 15°.
- Do not carry passengers.
- Do not tow.
- Use with line striping equipment only.
- Use appropriate traffic control in all traffic areas. Refer to Manual on Uniform Traffic Control Devices (MUTCD), U.S. Department of Transportation, Federal Highway Administration or local highway and transportation regulations.

MOVING PARTS HAZARD

Moving parts can pinch or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Before checking, moving, or servicing equipment, disable power supply.

BURN HAZARD

Equipment surfaces that are heated can become very hot during operation. To avoid severe burns, do not touch hot equipment. Wait until equipment has cooled completely.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Do not fill fuel tank while engine is running or hot; shut off engine and let it cool. Fuel is flammable and can ignite or explode if spilled on hot surface.
- Keep work area free of debris, including solvent, rags and gasoline.
- Keep a fire extinguisher in work area.

CARBON MONOXIDE HAZARD

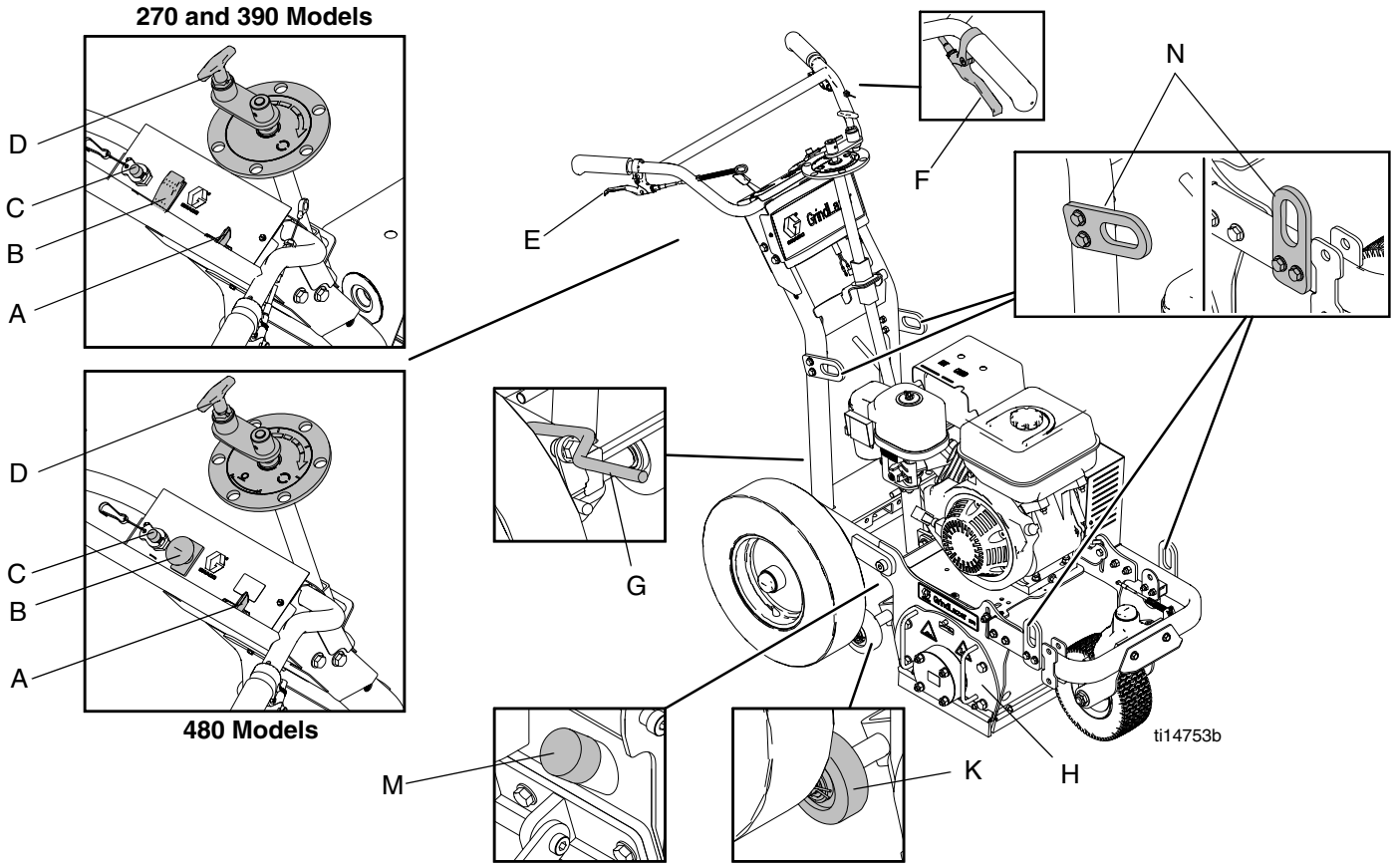
Exhaust contains poisonous carbon monoxide, which is colorless and odorless. Breathing carbon monoxide can cause death. Do not operate in an enclosed area.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of dust or chemicals, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eyewear
- Protective shoes
- Gloves
- Hearing protection
- Properly fit-tested and government approved respirator suitable for the dust conditions

Component Identification



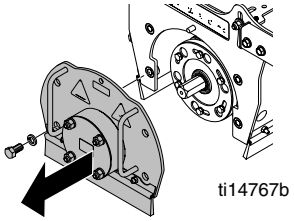
	Component	Description
A	Engine Throttle Lever	Adjusts engine speed.
B	Engine Stop Switch	Supplies power to Engine
C	Emergency Shut-Off	Clamps onto the operator and shuts engine off if cord is disconnected during operation.
D	Drum Adjustment Dial	Raises and lowers cutting drum.
E	Drum Engage Lever	When lever is engaged, handle bars can be pushed down to raise the cutting drum off of surface and locked into UP position. Once drum is locked in UP position, GrindLazer can be moved around without drum touching surface.
F	Front Wheel Lock Lever	Front wheel is usually locked to guide GrindLazer in a straight line. When lever is engaged, front wheel becomes unlocked and is allowed to turn freely.
G	Rear Wheel Parking Brake	Prevents rear wheel from moving.
H	Drum Access Panel	Removable plate that allows access to replace cutting drum.
K	Depth Control Wheels	Sets depth of drum cut
M	Vacuum Port	Port to attach vacuum to reduce dust and debris during operation.
N	Lift Points	Reinforced points used for lifting GrindLazer during transportation or repair.

Drum Replacement

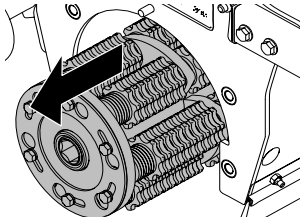
Avoid touching or handling drum after use until it has completely cooled.

Removal

1. Remove four bolts and Drum Access Panel (H).

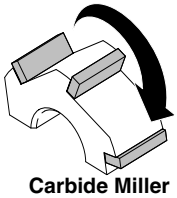


2. Slide drum off of hex shaft.



Installation

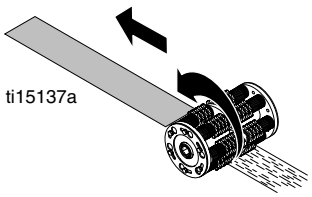
NOTE: Carbide Flail Cutter drums do not require specific orientation or direction. Carbide Millers and Diamond Blades are directional. They should be stacked so that the arrows on the Millers and Blades face the same direction as the rotation of the drum.



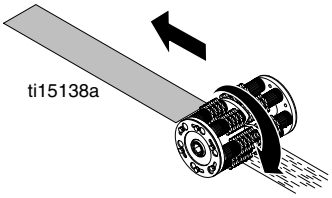
Carbide Miller

Diamond Blade

270 and **390** models are designed for “forward cut” grinding (the drum rotates in the same direction that it travels). **480** models are design for “reverse (up cut)” grinding (the drum rotates in the opposite direction that it travels).

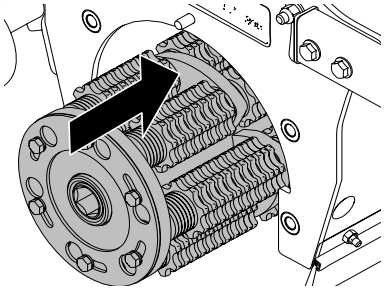


Forward Cut (270/390 Models)

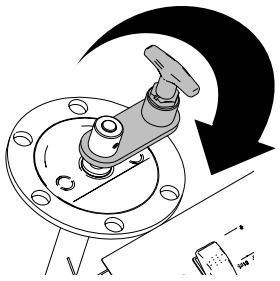


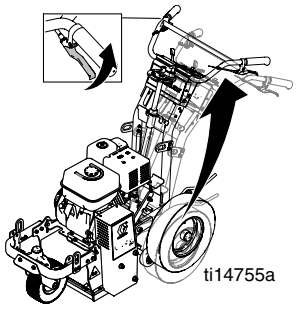
Reverse (up cut) 480 Models

1. Slide replacement drum onto hex shaft.

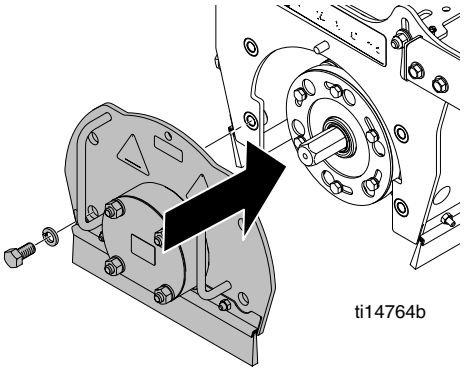


2. Lower Drum Adjustment Dial (D) and pull Drum Engage Lever (E) so drum rests on ground.

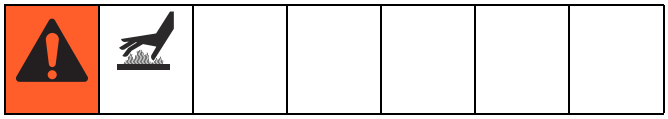




3. Replace Drum Access Panel (H) and tighten four bolts to 27-30 ft-lb (37-41 N•m).

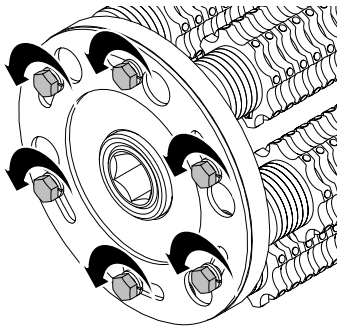


Cutter Replacement

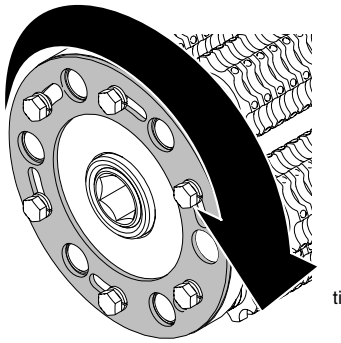


Removal (Carbide Flail/Carbide Miller)

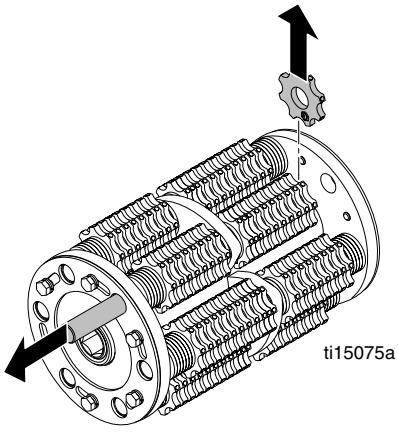
1. Remove drum (see **Drum Replacement**, page 6).
2. Loosen six bolts on each side of drum (do not remove bolts).



3. Rotate plates on each side of drum so rods are exposed.

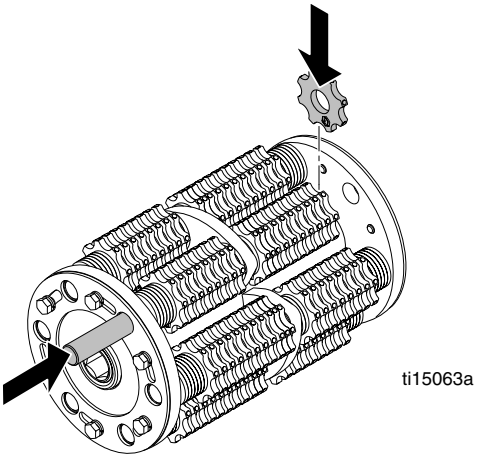


4. Push rod out and remove cutters.



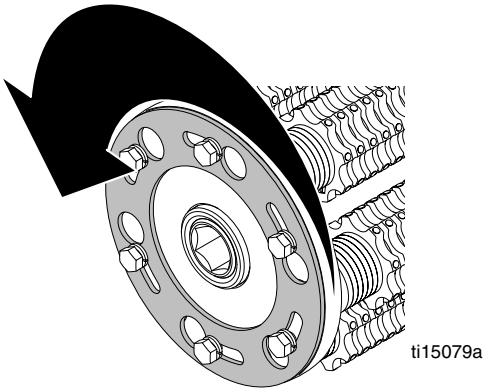
Installation (Carbide Flail/Carbide Miller)

1. Replace cutters and washers (see **Cutter Stacking Recommendations**, pages 17 - 29).

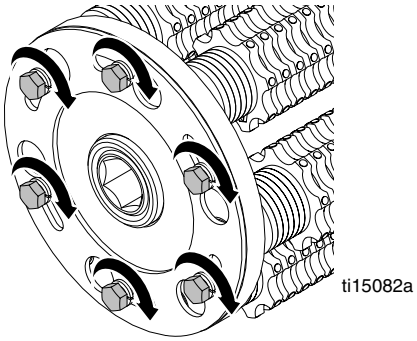


NOTE: Cutters must be centered on drum for best performance.

2. Rotate plates on each side of drum to cover rods.



3. Tighten six bolts on each side of drum to 125-175 in-lb (14-20 N•m).

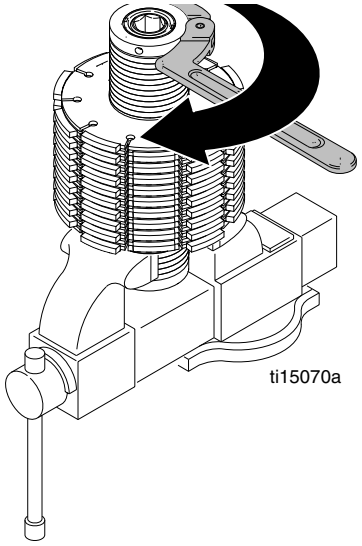


4. Install drum (see **Drum Replacement**, page 6).

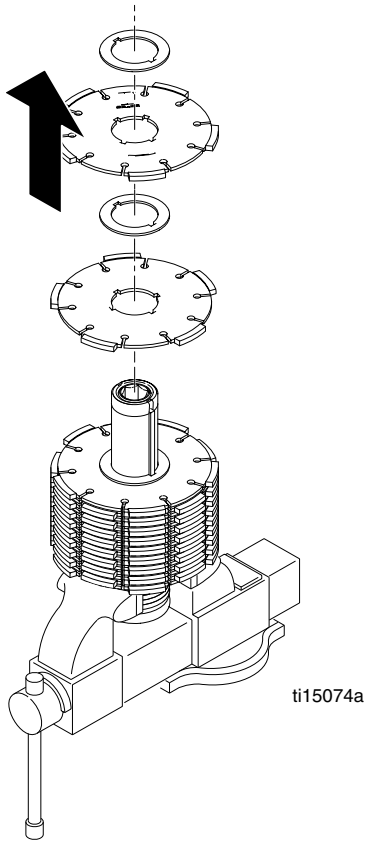
Removal (Diamond Blades)

1. Remove drum (see **Drum Replacement**, page 6).
2. Place drum in vise.
3. Use spanner wrench to loosen spanner nut (turn clockwise) and remove.

   NOTE: This nut has a left-hand thread.

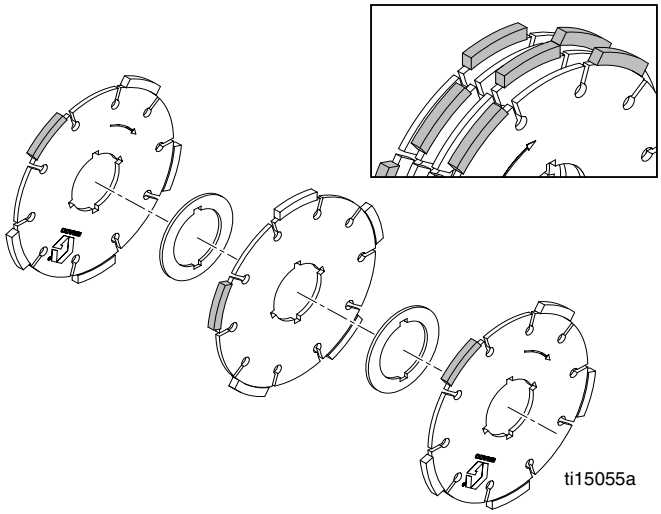


4. Remove all spacers and diamond blades.



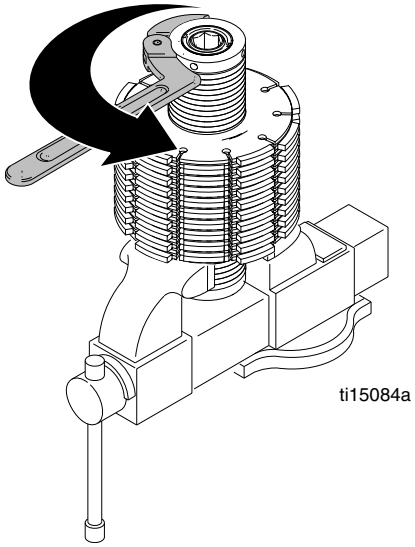
Installation (Diamond Blades)

1. Replace all spacers and diamond blades in the sequence and orientation shown below (blades should be rotated in alternating segments when stacking).



   NOTE: Blades must be centered on drum for best performance.

2. Use spanner wrench to tighten spanner nut (turn counter-clockwise).

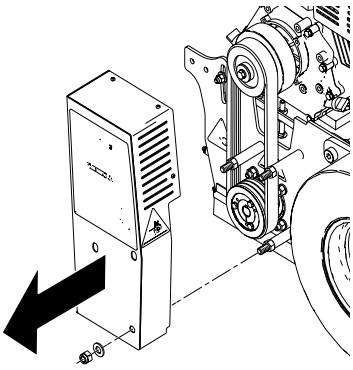


3. Remove drum from vise and install drum (see **Drum Replacement**, page 6).

Belt Replacement

Removal

1. Remove three nuts and washers. Remove belt shroud.



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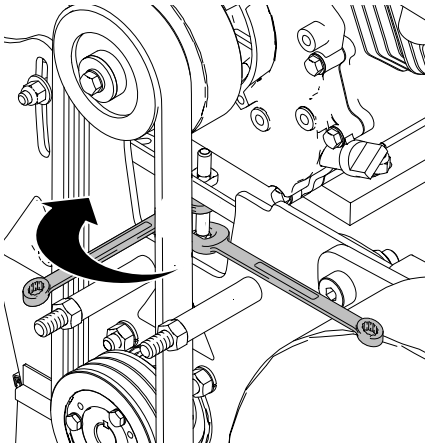
2. Loosen jam nut through two sides of belt.



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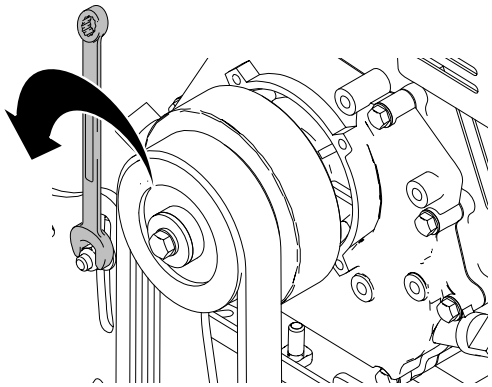
3. Use two wrenches to loosen motor mount bolts on each side of scarifier base.



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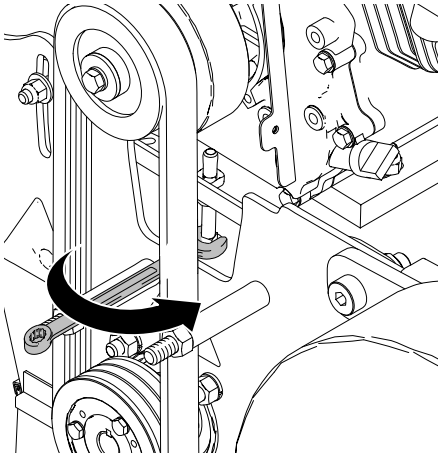
4. Tighten bottom bolt to lower pulley plate.



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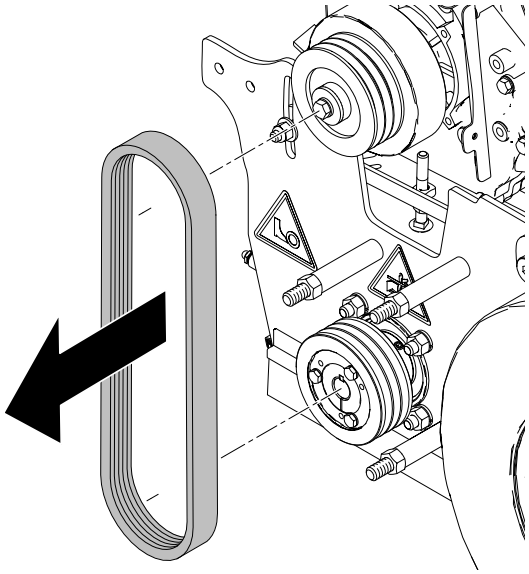
5. Remove used belt.



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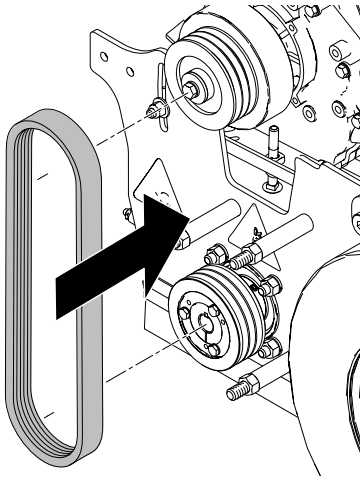
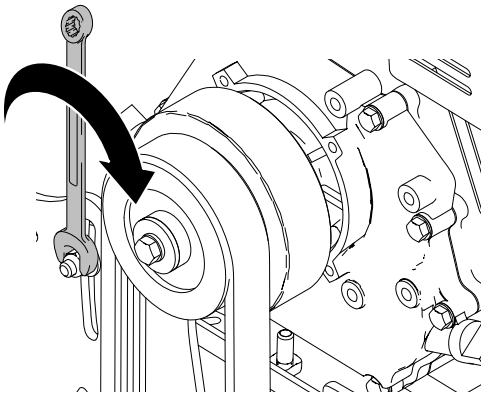
Installation

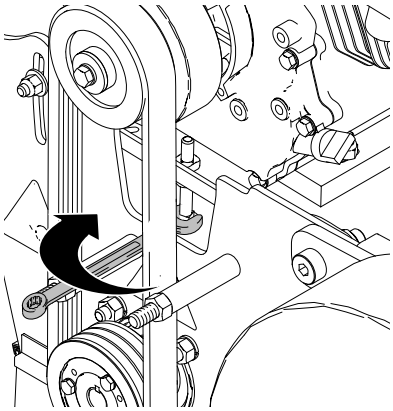
1. Install new belt.



2. Use two wrenches to tighten motor mount adjustment bolts on each side of scarifier base.



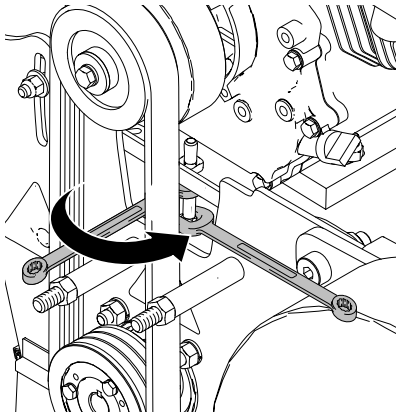
3. Tighten belt adjustment bolt according to recommended tension below.



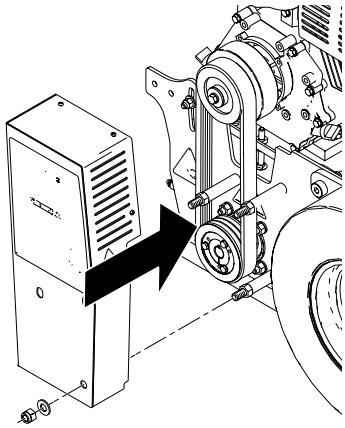
Belt Tension Recommendations:

Series A Models (3VX375 Belt)		270	390	480
New Belt	Tension (Lbf)	130 +/- 5	174 +/- 6	204 +/- 7
	Frequency (Hz)	83 +/- 2	96 +/- 2	104 +/- 2
Used Belt	Tension (Lbf)	112 +/- 5	150 +/- 6	176 +/- 7
	Frequency (Hz)	77 +/- 2	90 +/- 2	97 +/- 2
Series B Models (3VX355 Belt)		**270**	**390**	**480**
New Belt	Tension (Lbf)	145 +/- 5	193 +/- 7	194 +/- 7
	Frequency (Hz)	91 +/- 2	105 +/- 2	105 +/- 2
Used Belt	Tension (Lbf)	125 +/- 5	167 +/- 7	167 +/- 7
	Frequency (Hz)	85 +/- 2	98 +/- 2	98 +/- 2

4. Tighten jam nut through two sides of belt.



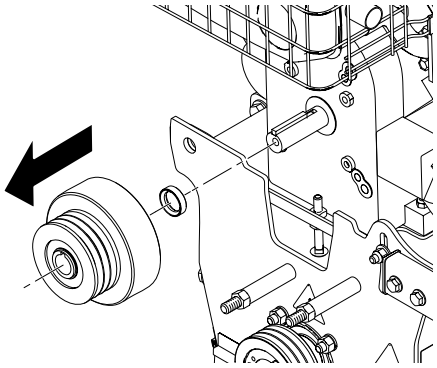
5. Replace belt shroud and tighten three nuts and four screws.



Clutch Replacement

Removal

1. Remove belt guard and belt (see **Belt Replacement**, page 9).
2. Use impact wrench to remove clutch bolt.



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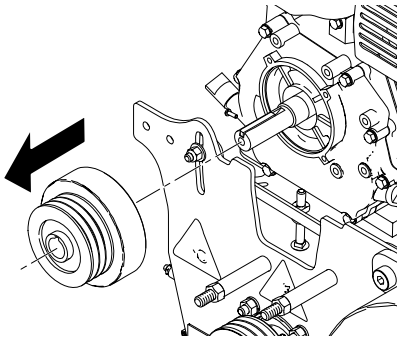
3. Remove used clutch.



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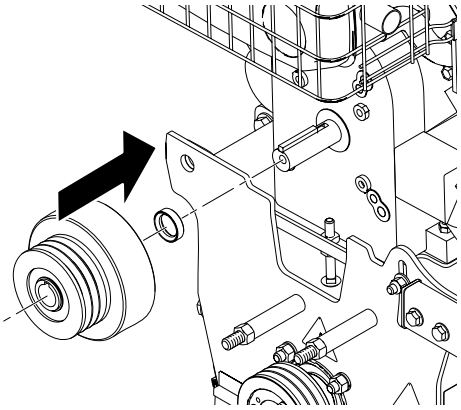
Installation

1. Install clutch.



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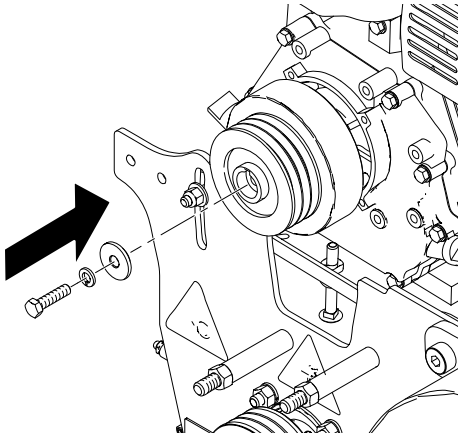
2. Use impact wrench to tighten clutch bolt.



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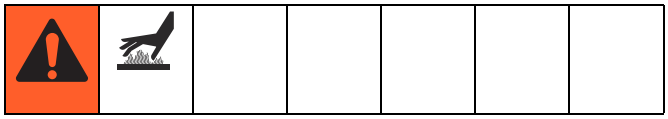
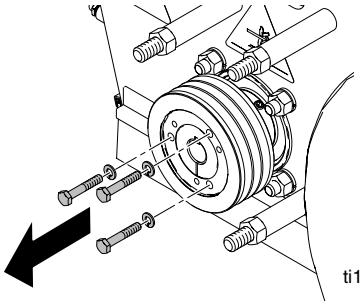
3. Install belt and belt guard (see **Belt Replacement**, page 9).

Pulley Replacement

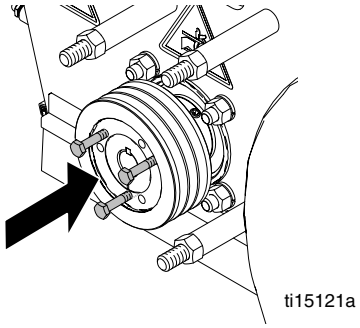


Removal

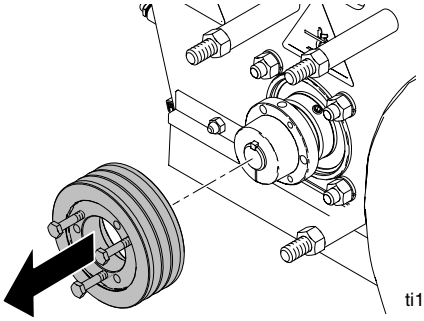
1. Remove drum (see **Drum Replacement**, page 6).
2. Remove belt guard and belt (see **Belt Replacement**, page 9).
3. Remove three belt pulley screws and washers.



4. Insert three screws into pulley removal holes. Evenly tighten screws and slowly remove pulley.

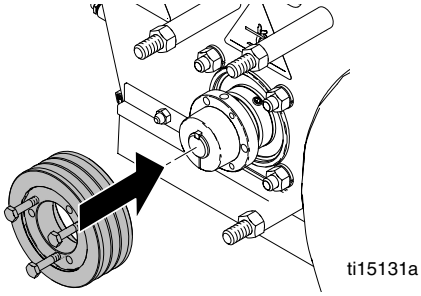


5. Remove pulley.

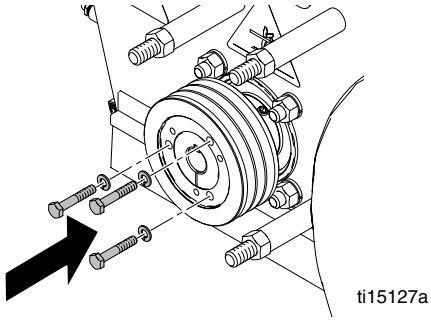


Installation

6. Install pulley onto hex shaft.

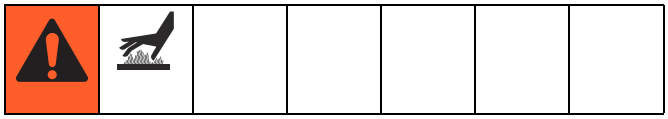


7. Insert three pulley screws and washers.



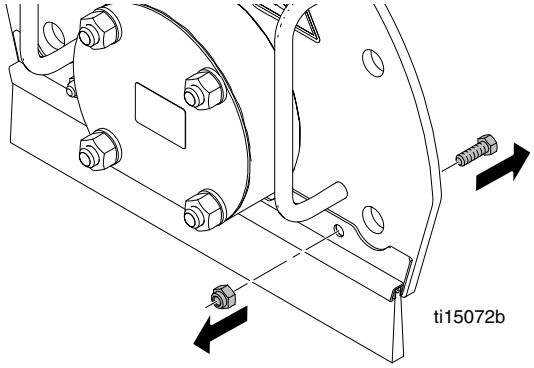
8. Replace belt guard and belt (see **Belt Replacement**, page 9).
9. Replace drum (see **Drum Replacement**, page 6).

Brush Replacement

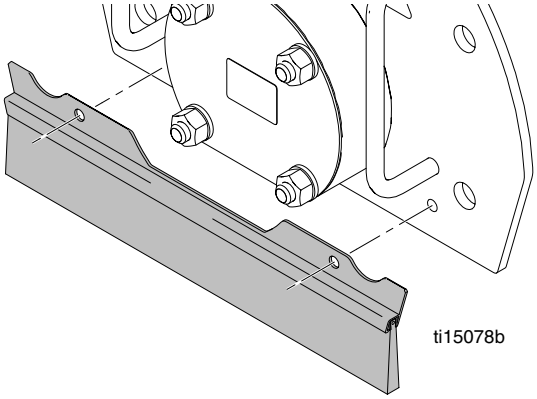


Removal

1. Remove two mounting bolts.

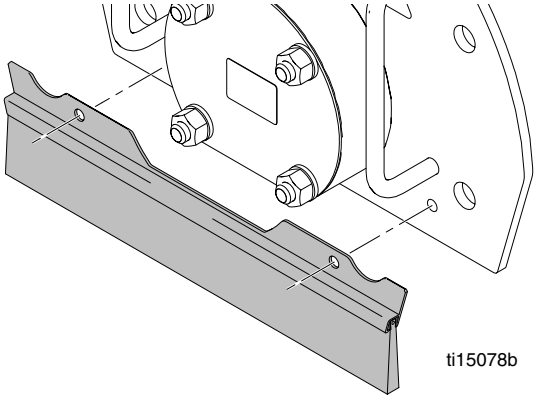


2. Remove used brush.

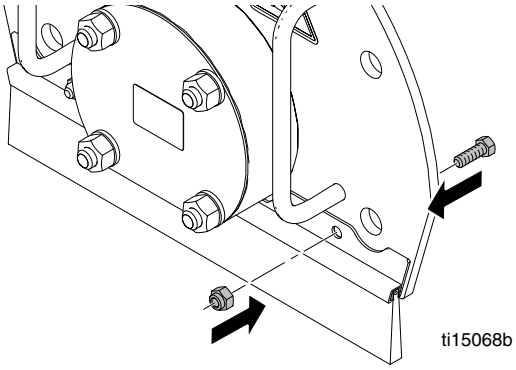


Installation

1. Install new brush.



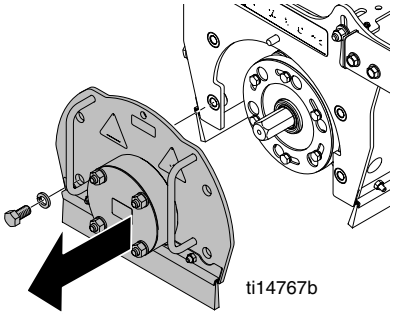
2. Tighten two mounting bolts.



Drive Bearing Assembly Replacement

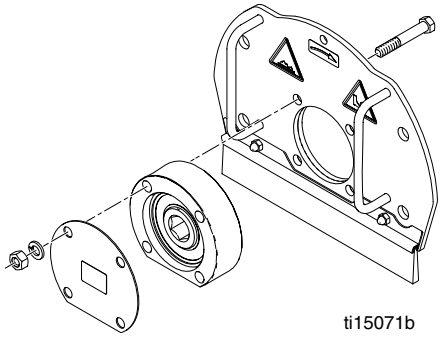
Door Bearing Assembly Removal

1. Remove four nuts holding bearing assembly onto door and remove door.



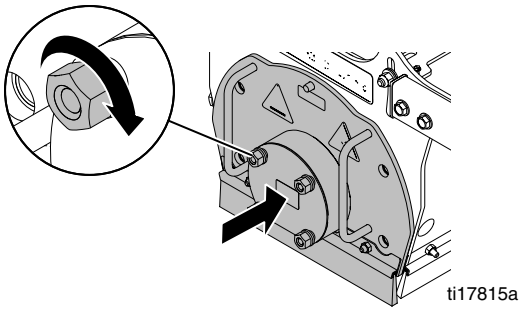
Door Bearing Assembly Installation

1. Insert new door bearing assembly through hole in door. **NOTE:** Make sure shaft seal is on the inside of the cage.



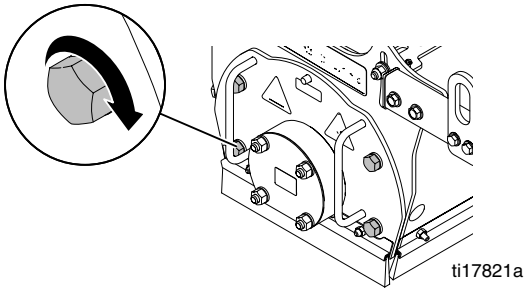
2. Install dust cover onto bearing. Hand-tighten nuts and lock washers to the door. **NOTE:** Do NOT fully tighten bolts at this time.

3. Assemble door onto unit and slide door around until the bearing assembly settles into position for proper alignment.



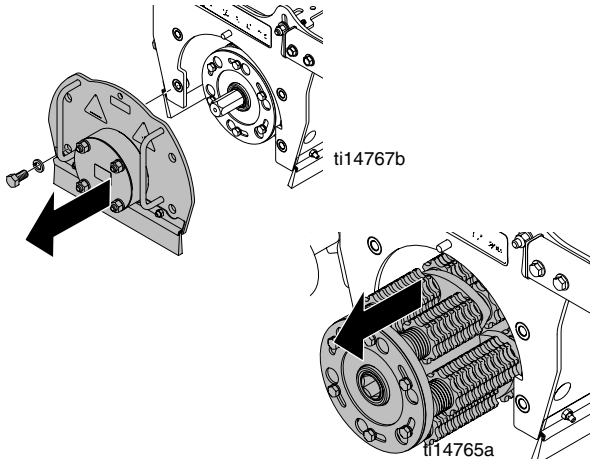
4. Tighten four nuts on bearing assembly to secure it into place.

5. Tighten four bolts to hold door in place.



Drive Bearing Assembly Removal

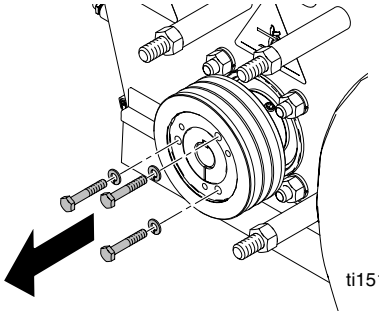
1. Remove door from unit and remove any cutting drum on machine.



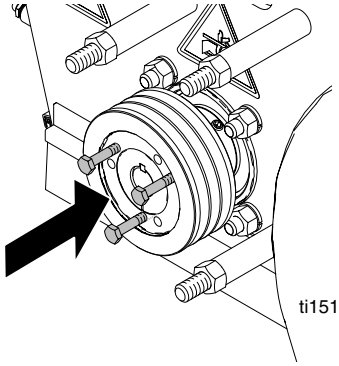
2. Remove belt guard and belt (see page 9).

3. Remove sheave.

   a. Remove three bolts holding sheave onto bushing.

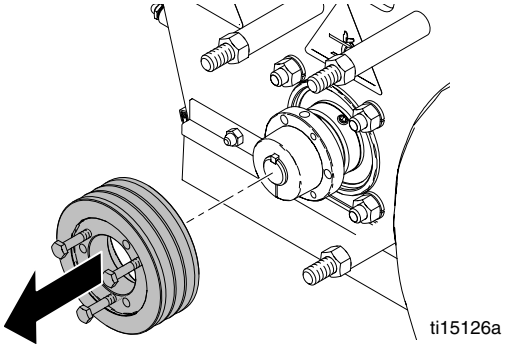


   b. Insert three bolts into adjacent holes and evenly tighten to remove sheave from bushing.

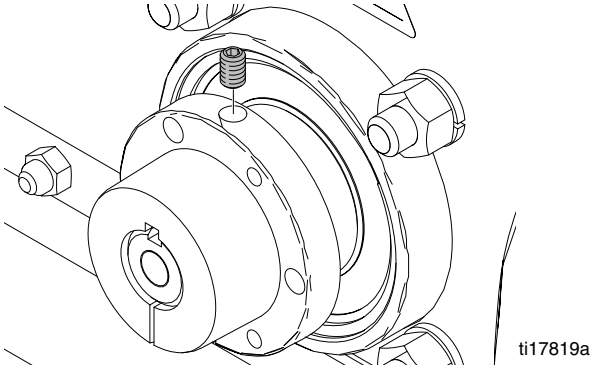


NOTICE
Do NOT over torque an individual bolt or it will break.

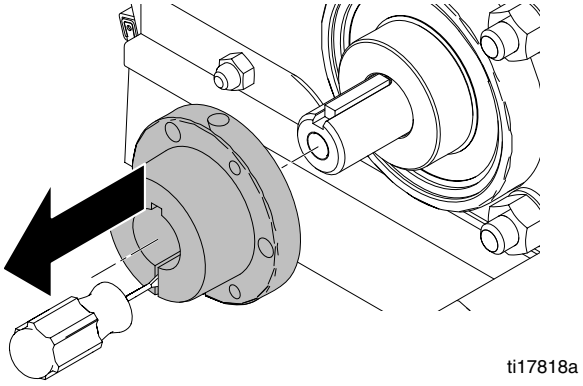
   c. Remove sheave.



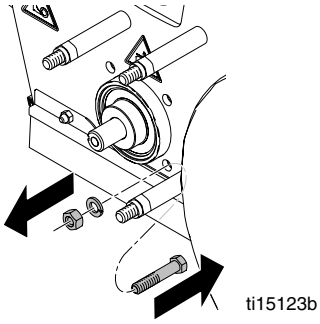
   d. Remove set screw from bushing.



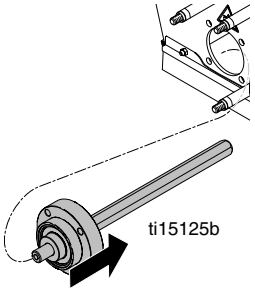
   e. Remove bushing from drive shaft. If bushing is very tight, tap a flat-head screwdriver into slot on bushing to open it up and slide off shaft.



4. Remove all four nuts holding drive side bearing onto cage.

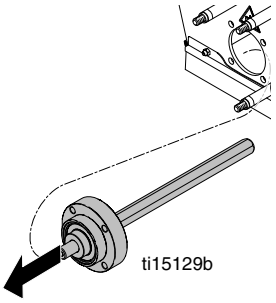


5. Slide shaft assembly out of holes.



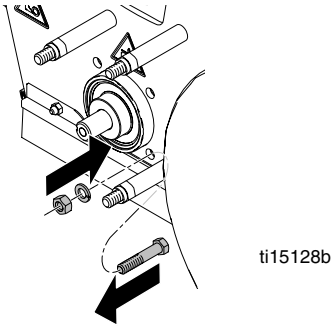
Drive Bearing Assembly Installation

1. Insert new drive bearing assembly into cage.

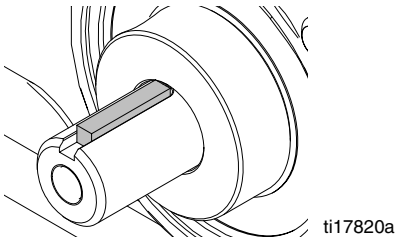


NOTE: Be sure to use the shorter bolts for the drive side bearing.

2. Tighten nuts and lock washers to hold bearing assembly in place.

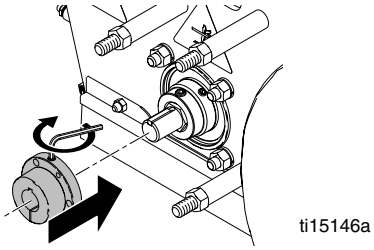


3. Make sure drive shaft key is assembled as shown below.



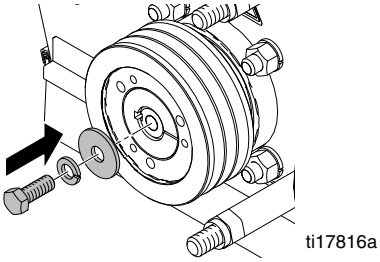
Sheave Installation

1. Insert bushing onto drive shaft. Make sure key is in place.

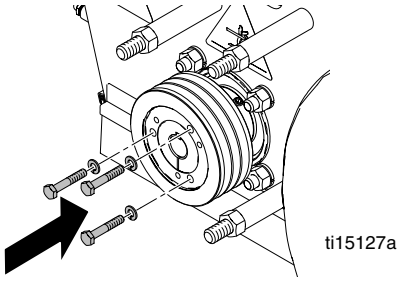


2. Apply thread sealant to set screw and install set screw into bushing.

3. Apply thread sealant to bolt and place lock washer and spacer onto bolt as shown. Thread it into the end of the shaft and tighten. Make sure lock washer is fully compressed.



4. Install sheave onto bushing and evenly tighten three bolts and lock washers to pull the sheave onto the building.

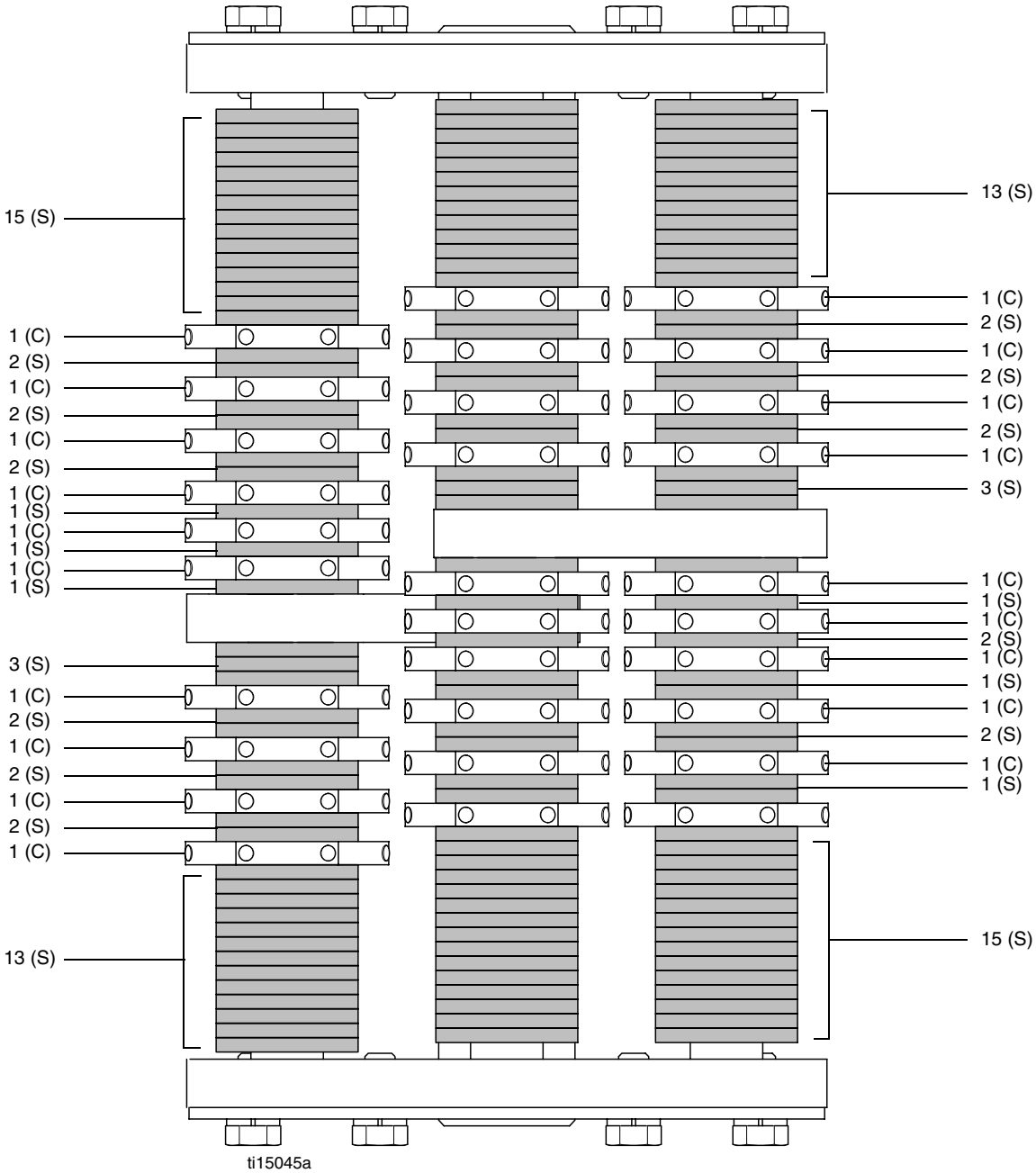


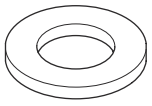
5. Replace belt and belt guard (see page 9).

Cutter Stacking Recommendations

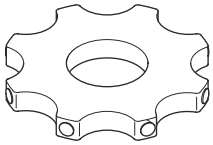
6 in. (15 cm) Coarse Cut Flail Cutters (Double Space)
276 Spacers / 60 Cutters

INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.





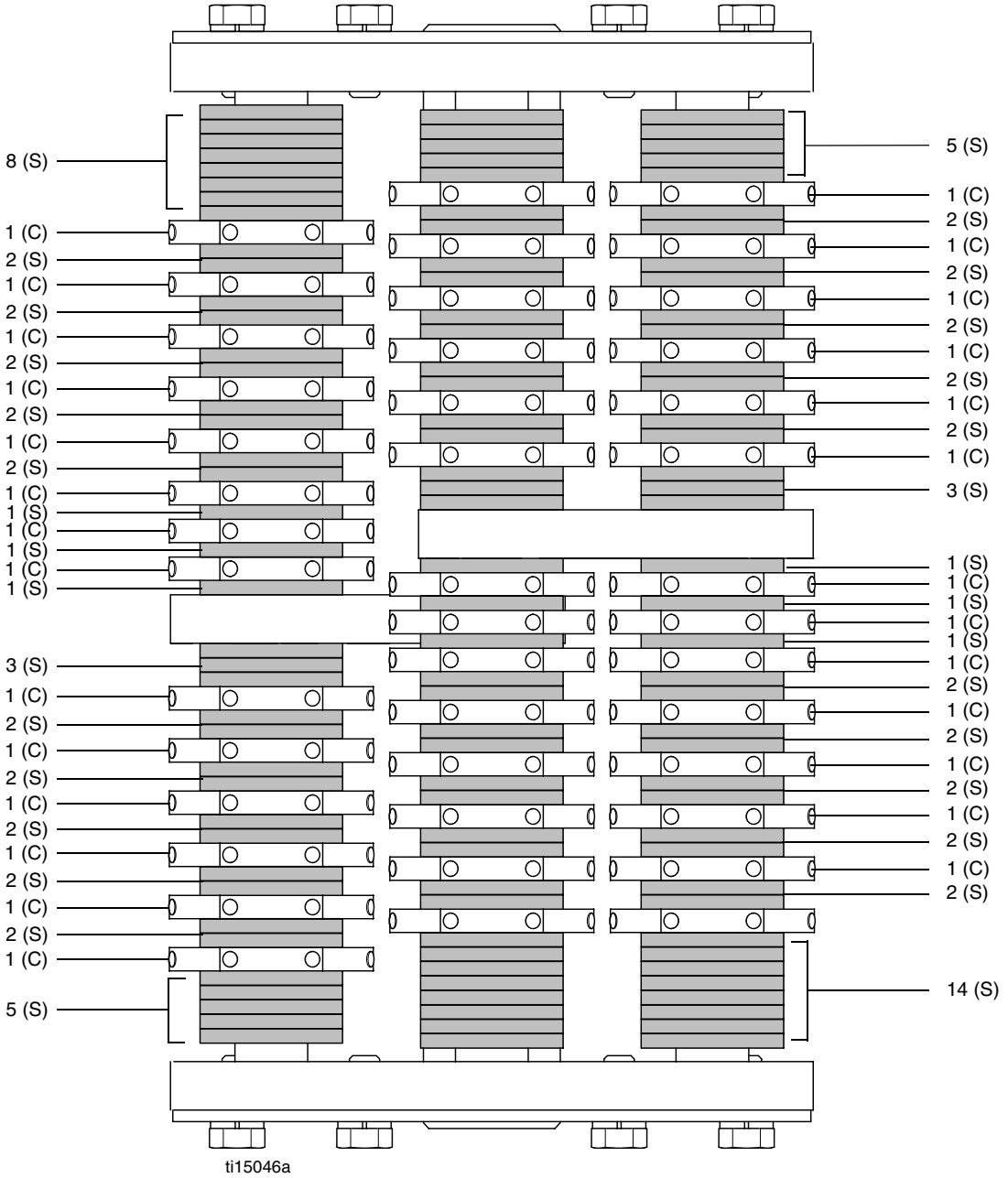
(S) Spacer



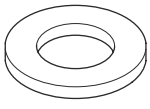
(C) Carbide Cutter

8 in. (20 cm) Coarse Cut Flail Cutters (Double Space)
234 Spacers / 84 Cutters

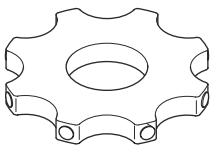
INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.



ti15046a



(S) Spacer

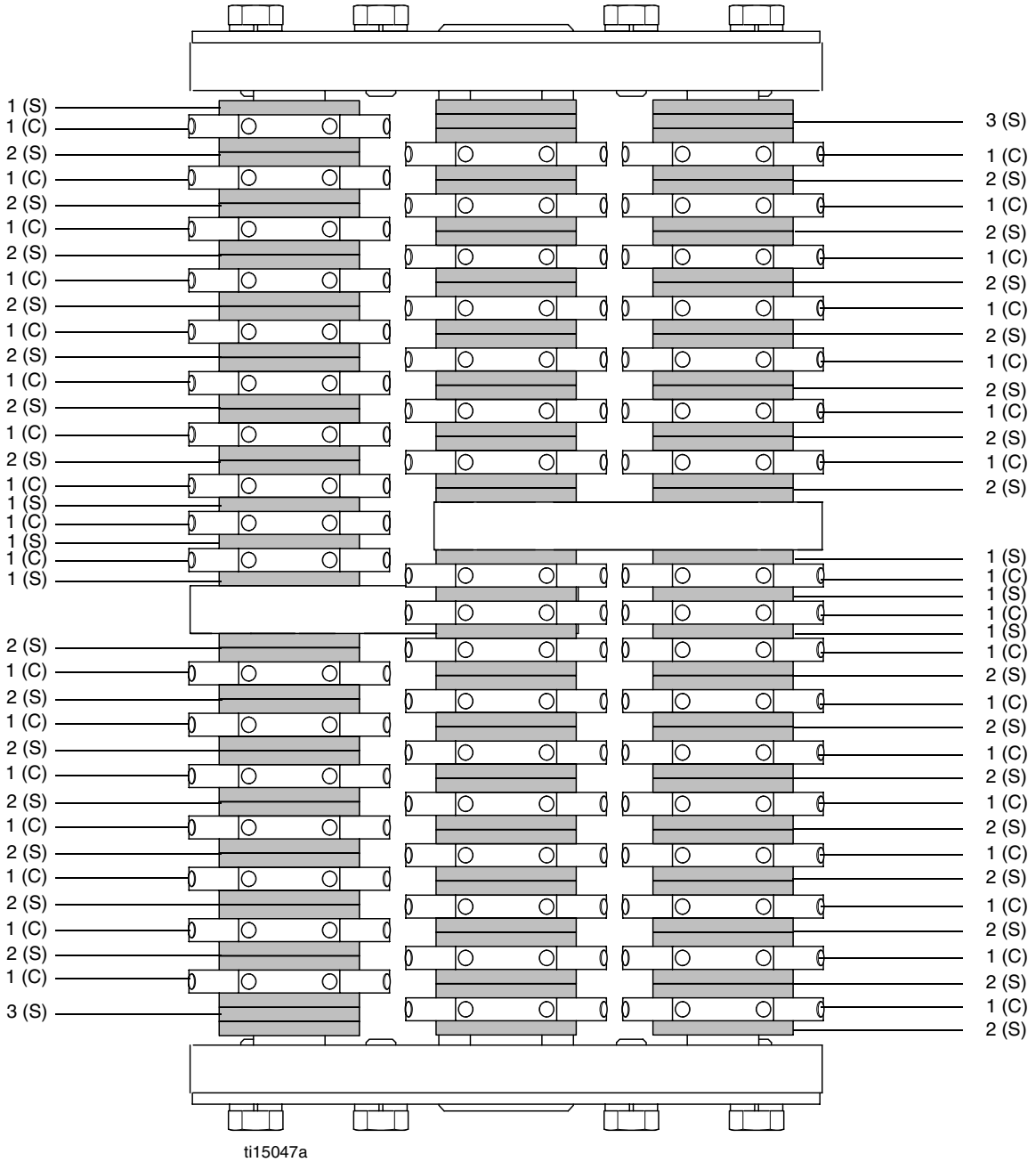


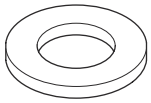
ti15053a

(C) Carbide Cutter

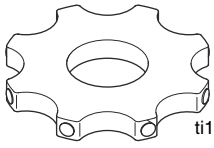
10 in. (25 cm) Coarse Cut Flail Cutters (Double Space)
210 Spacers / 102 Cutters

INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.





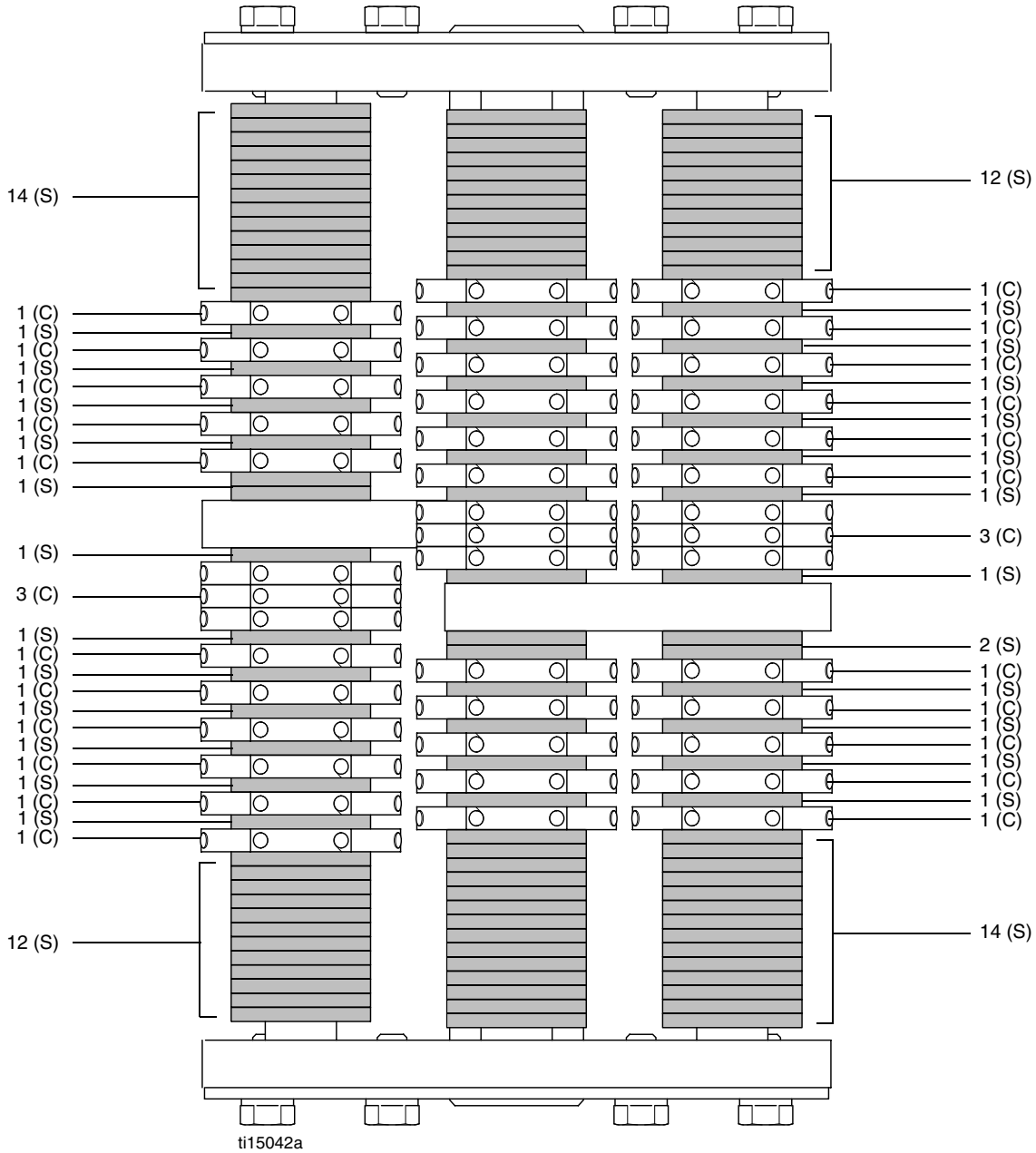
(S) Spacer

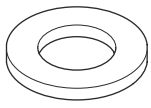


(C) Carbide Cutter

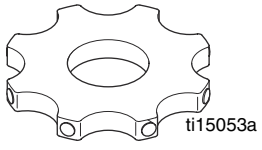
6 in. (15 cm) General Cut Flail Cutters (Single Space)
234 Spacers / 84 Cutters

INSTRUCTIONS: Rotate drum 180° and repeat for remaining shafts.





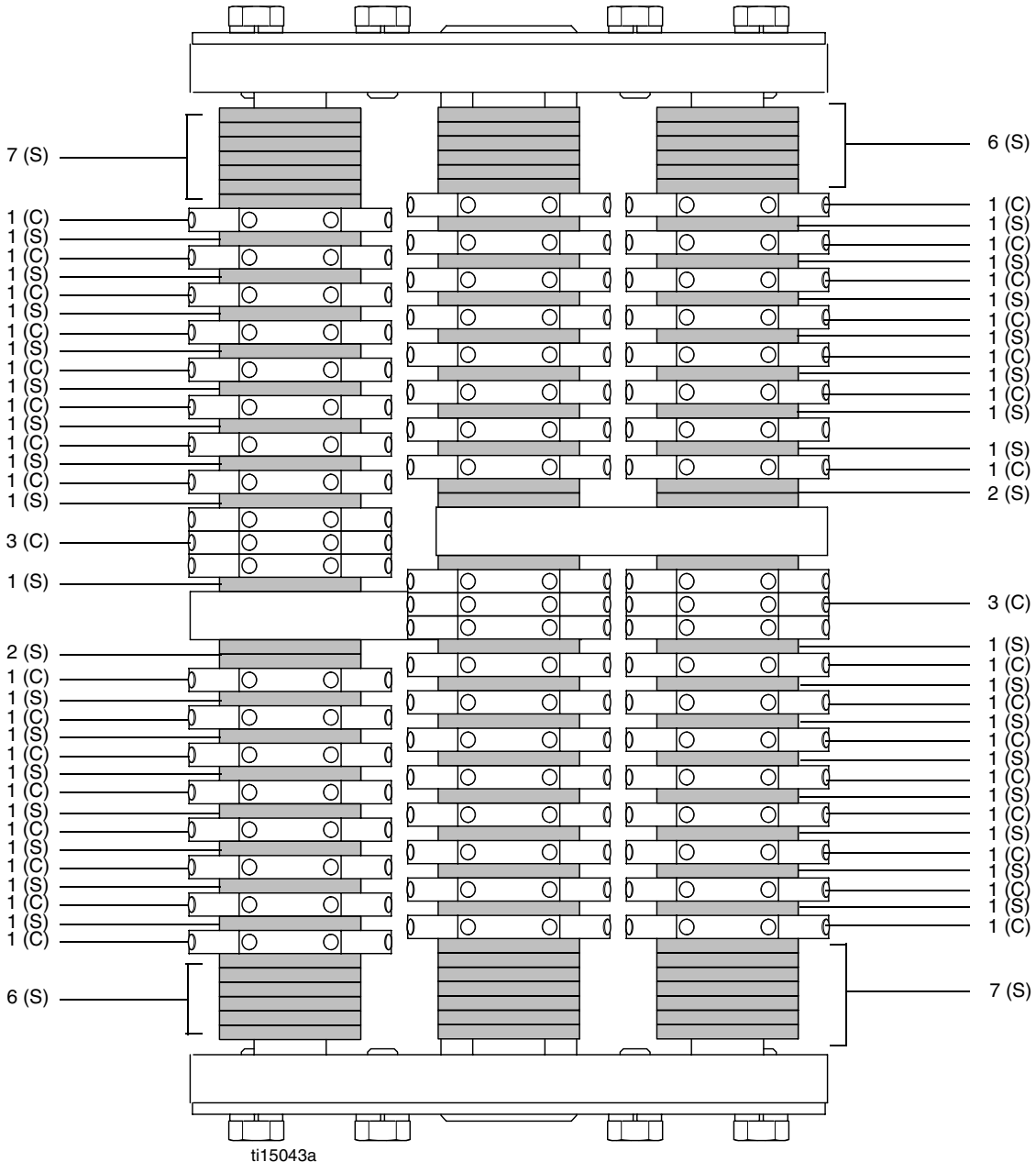
(S) Spacer

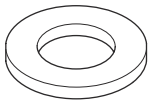


(C) Carbide Cutter

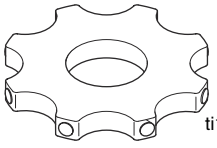
8 in. (20 cm) General Cut Flail Cutters (Single Space)
186 Spacers / 114 Cutters

INSTRUCTIONS: Rotate drum 180° and repeat for remaining shafts.





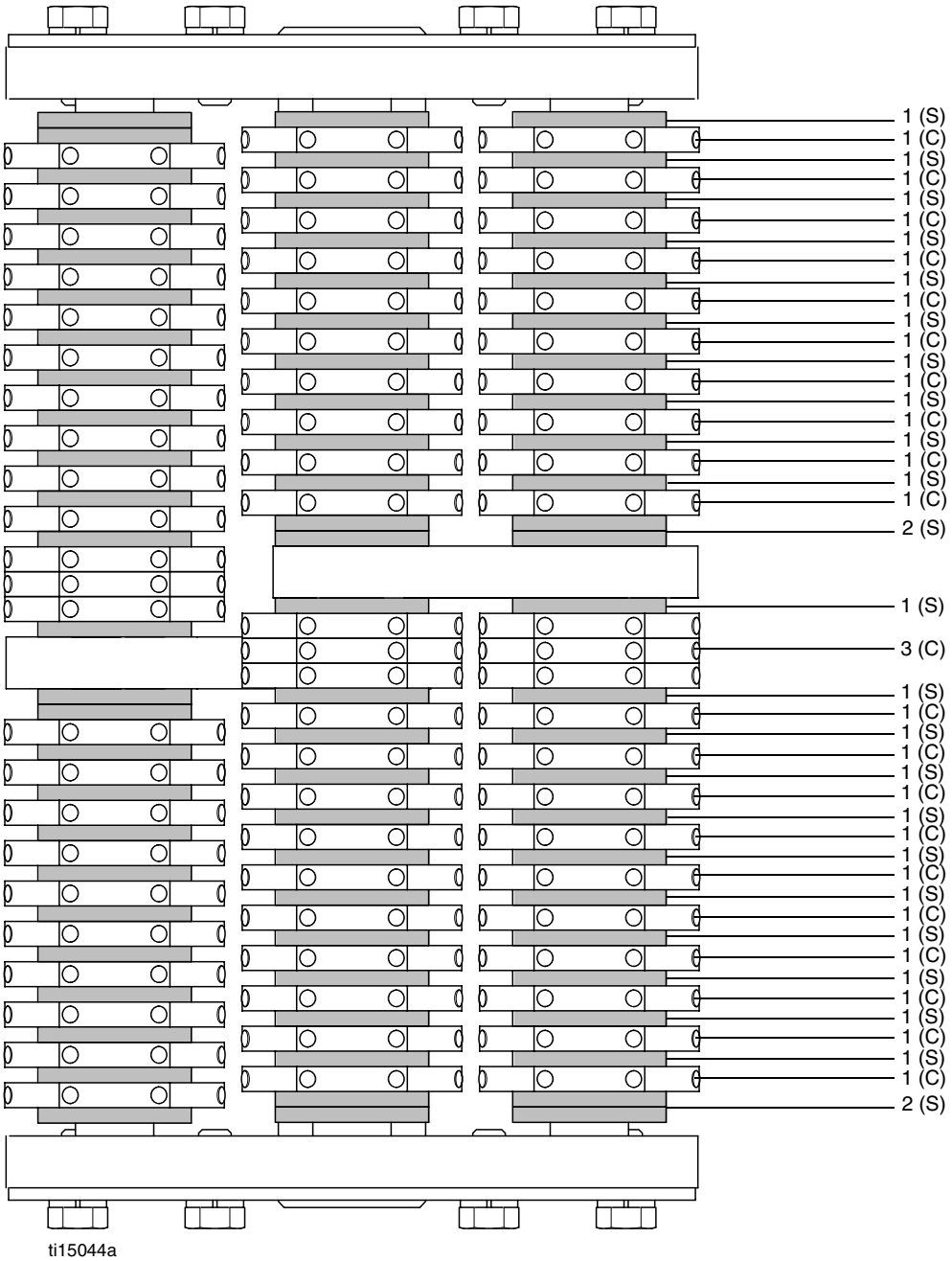
(S) Spacer

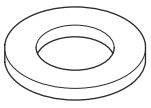


(C) Carbide Cutter

10 in. (25 cm) General Cut Flail Cutters (Single Space)
150 Spacers / 138 Cutters

INSTRUCTIONS: Rotate drum 180° and repeat for remaining shafts.



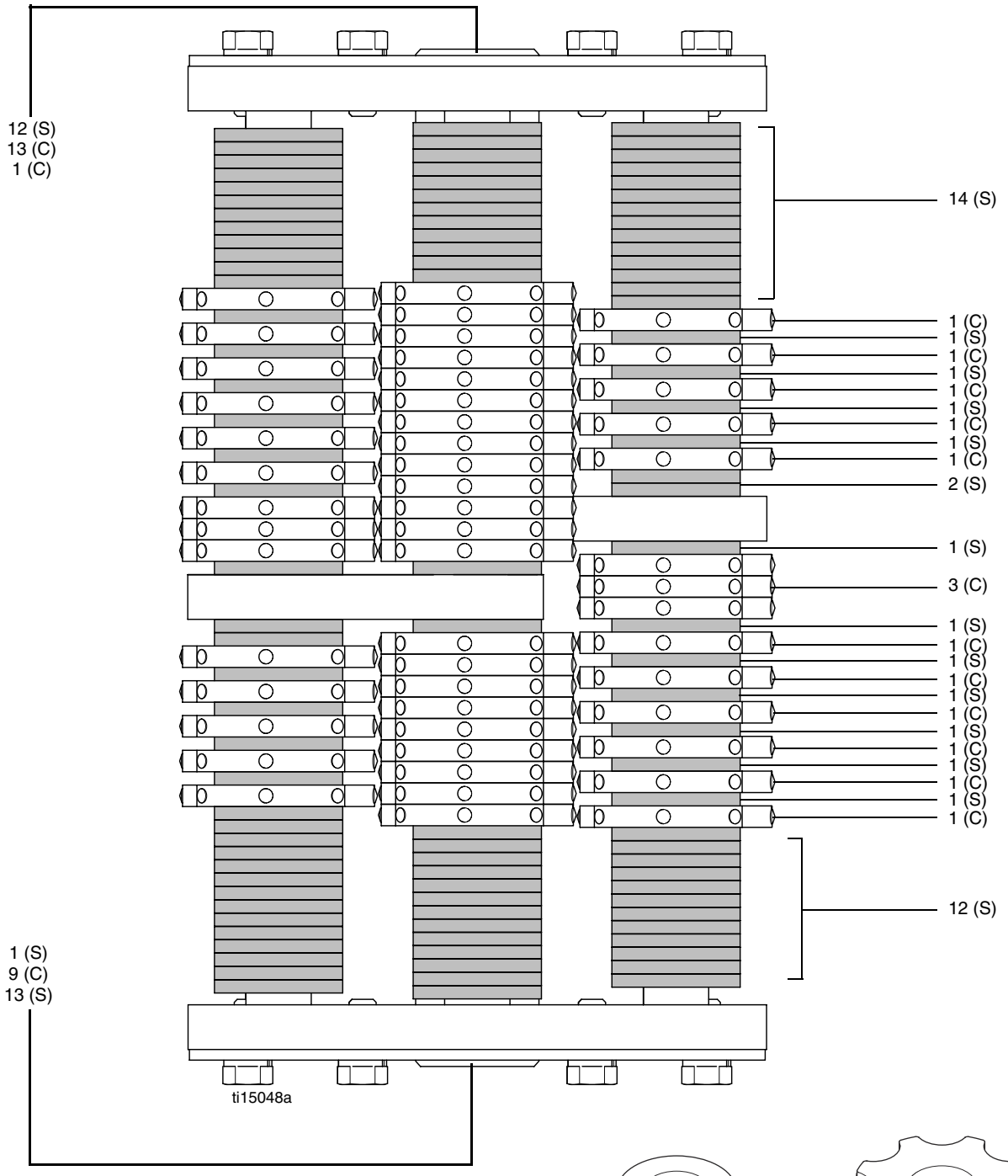


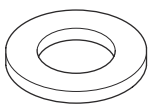
(S) Spacer

(C) Carbide Cutter

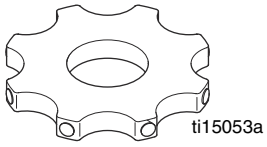
6 in. (15 cm) Fine Cut Flail Cutters
198 Spacers / 108 Cutters

INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.





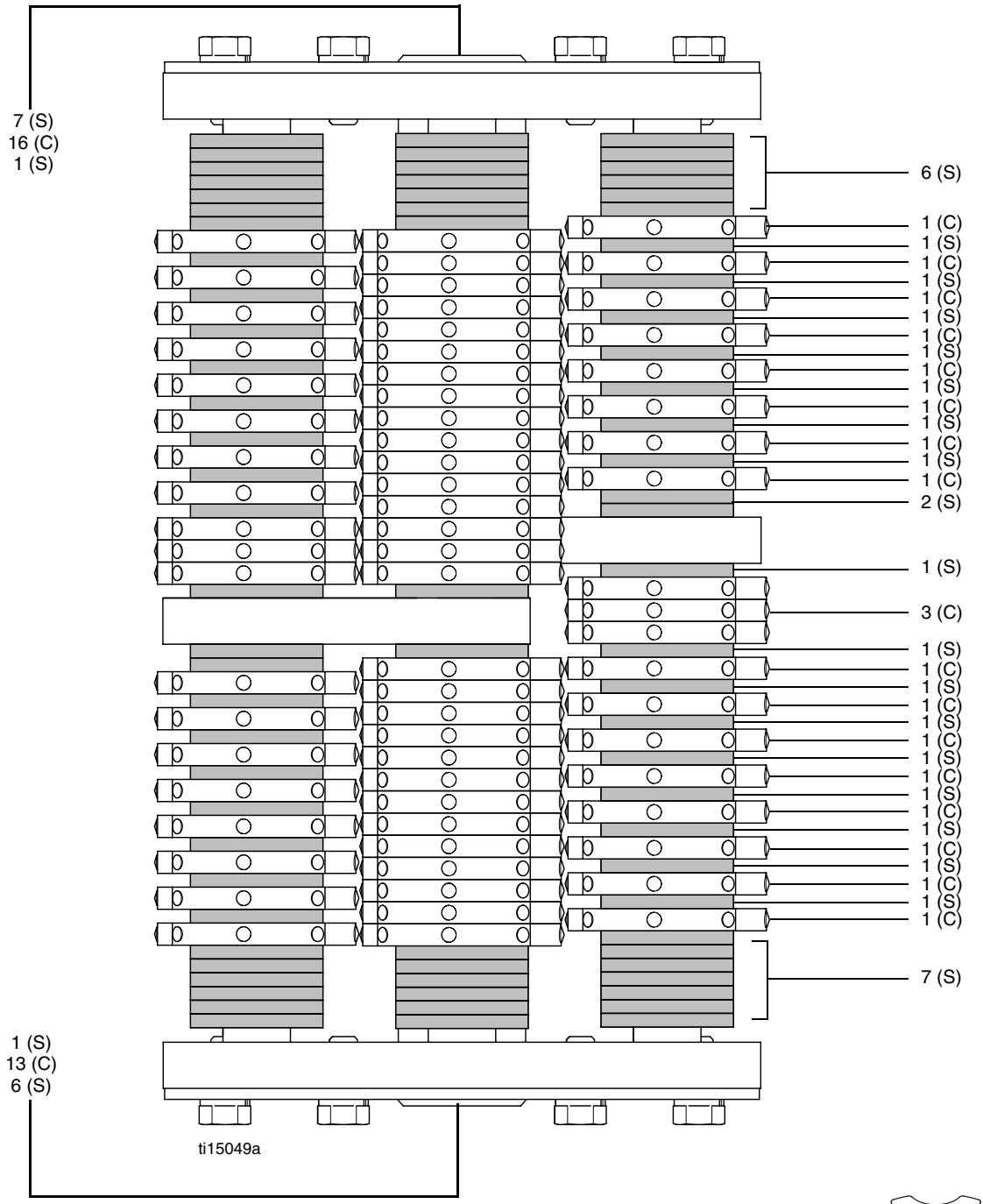
(S) Spacer

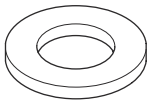


(C) Carbide Cutter

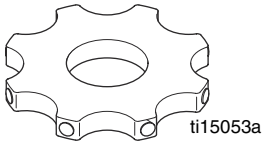
8 in. (20 cm) Fine Cut Flail Cutters
138 Spacers / 144 Cutters

INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.





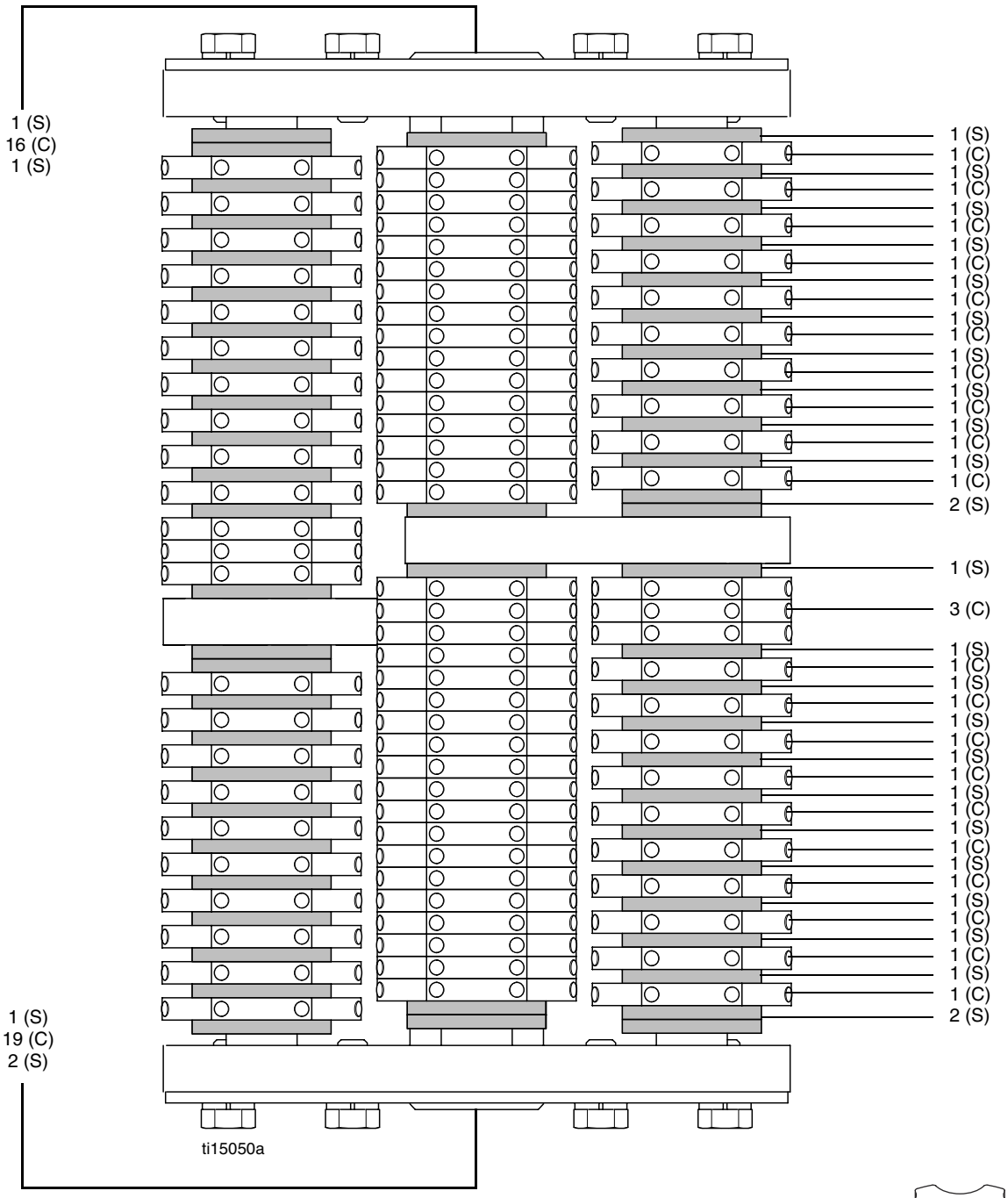
(S) Spacer

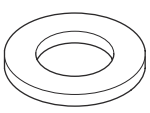


(C) Carbide Cutter

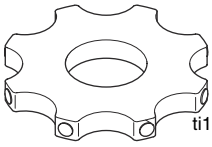
10 in. (25 cm) Fine Cut Flail Cutters
90 Spacers / 174 Cutters

INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.





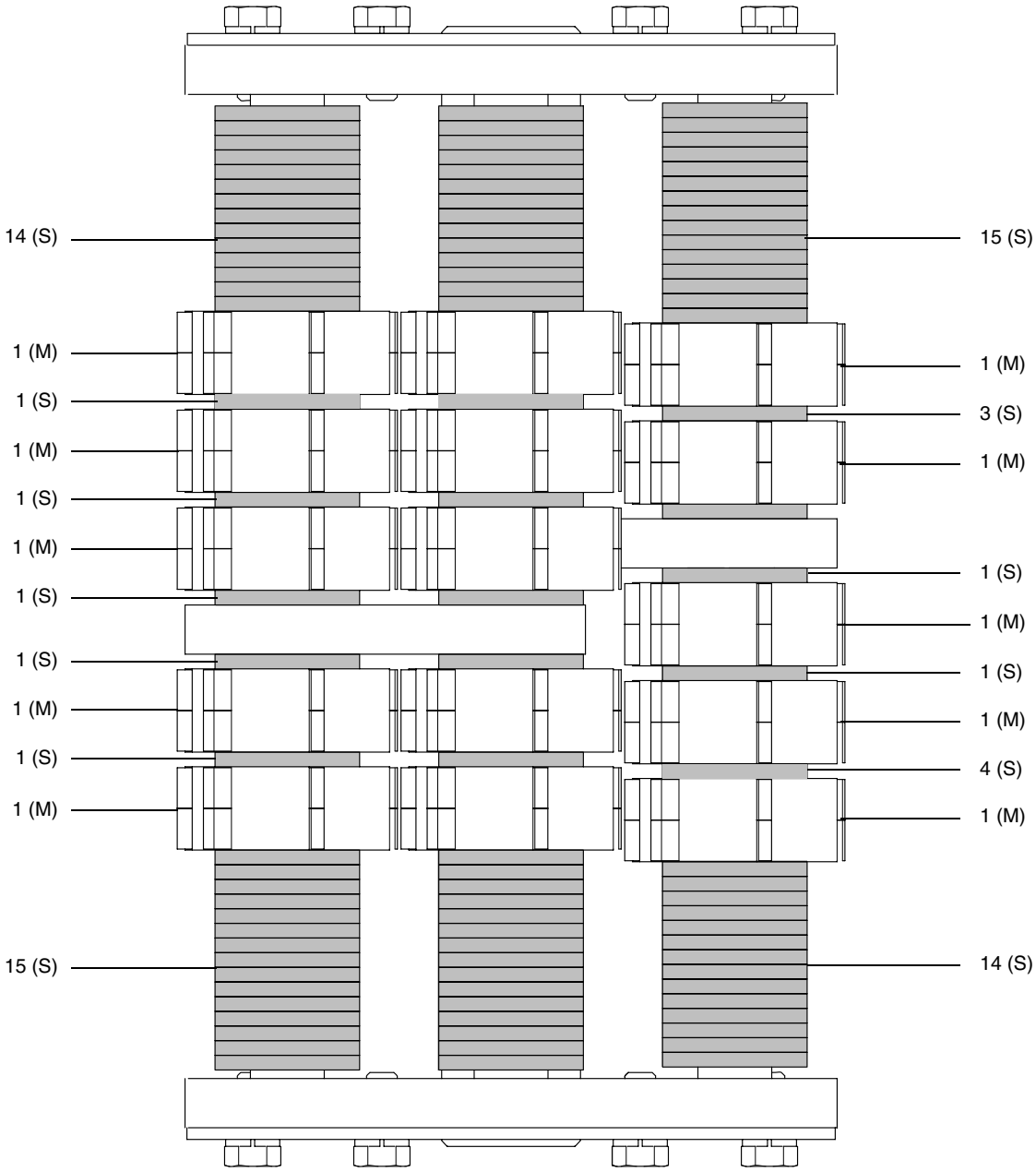
(S) Spacer



(C) Carbide Cutter

6 in. (15 cm) Cut Carbide Millers
204 Spacers / 30 Cutters

INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.



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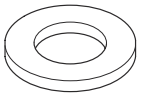

(S) Spacer

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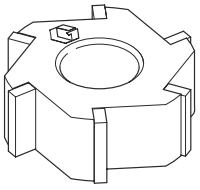
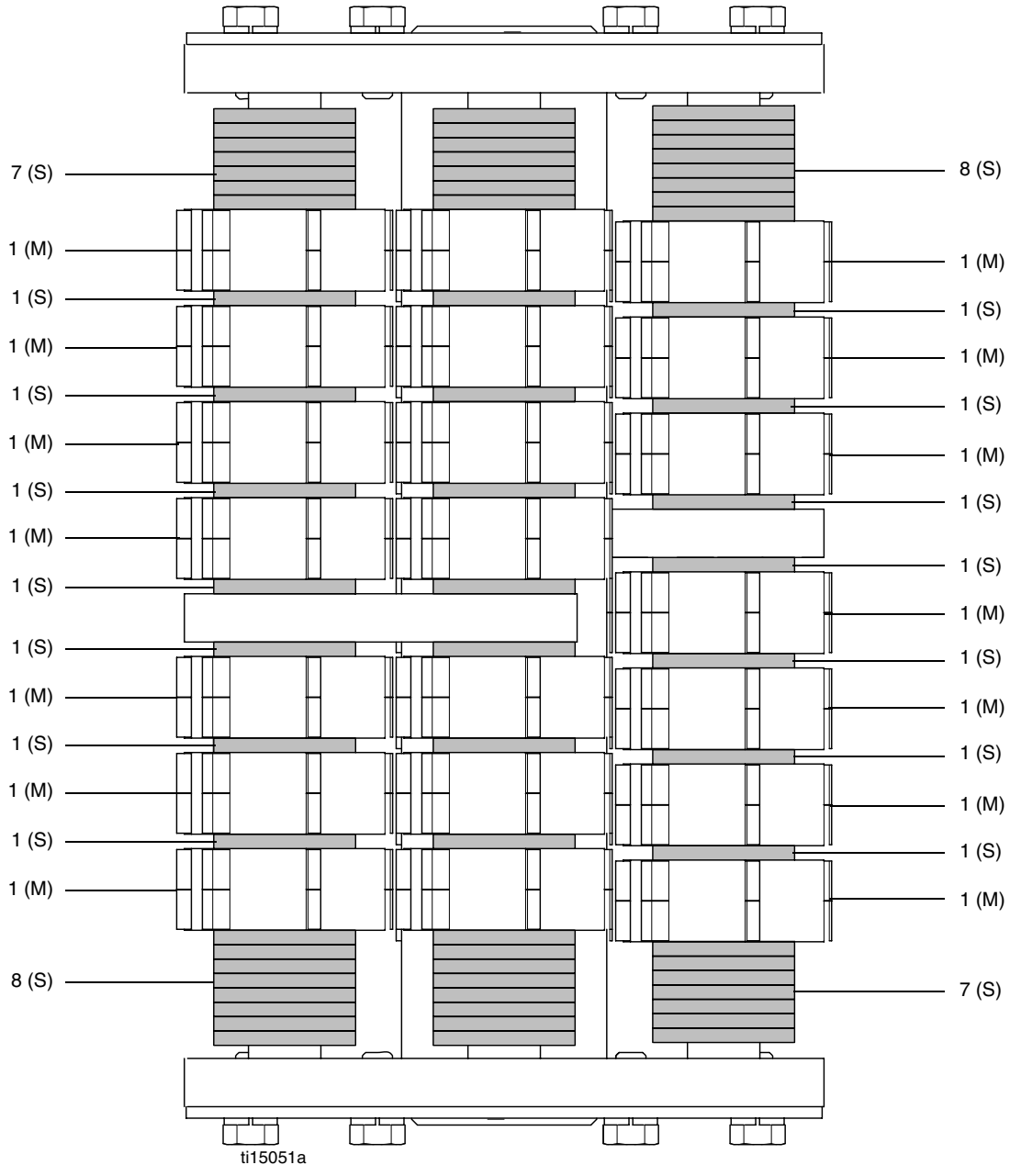
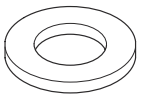


(M) Miller

8 in. (20 cm) Cut Carbide Millers
132 Spacers / 42 Cutters

INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.





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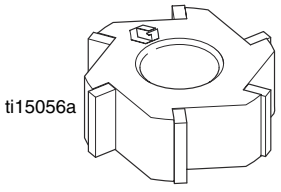
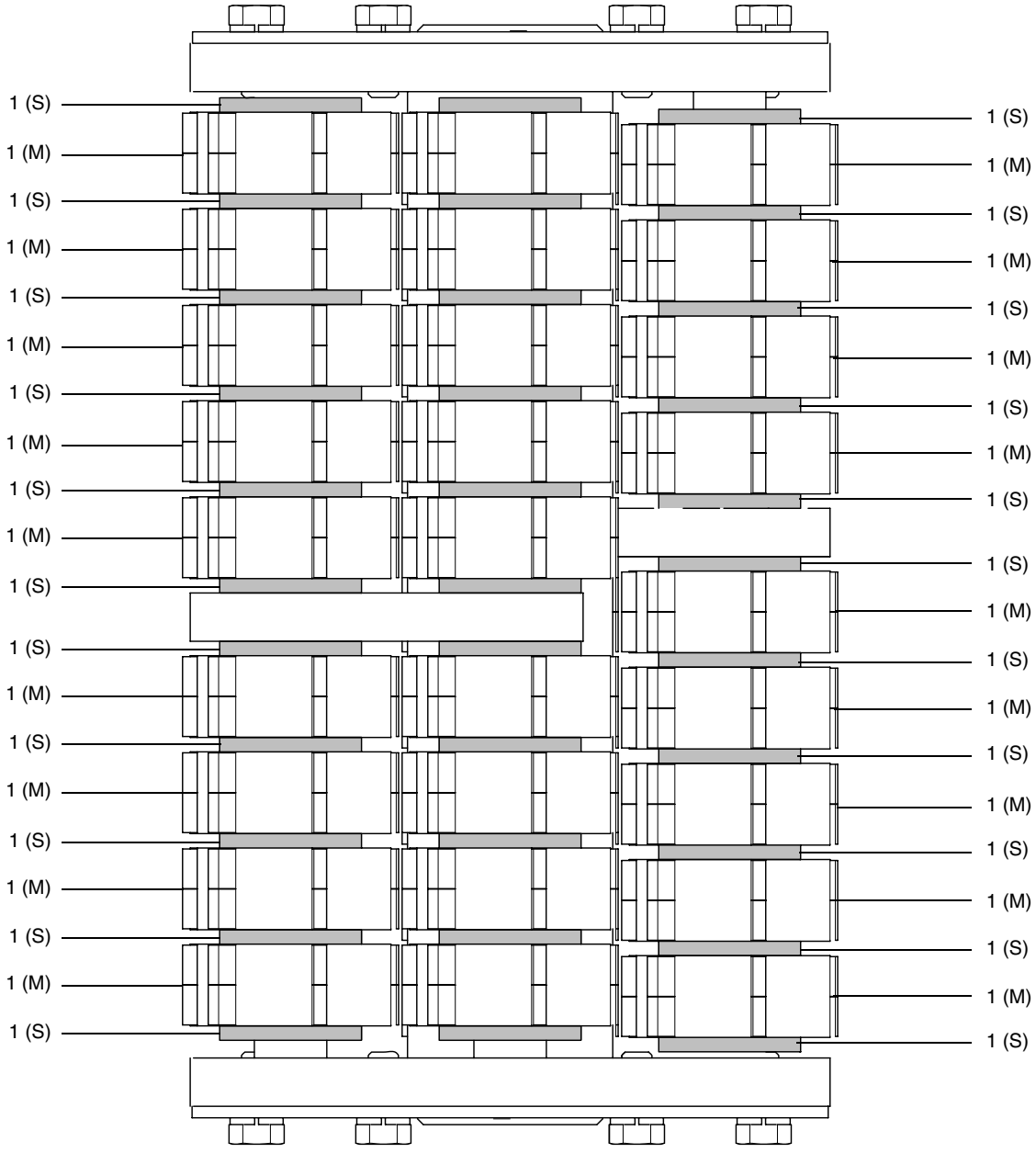


(M) Miller

10 in. (25 cm) Cut Carbide Millers
66 Spacers / 54 Cutters

INSTRUCTIONS: Rotate sequence 180° and repeat for remaining shafts.



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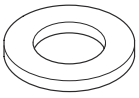

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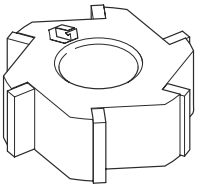
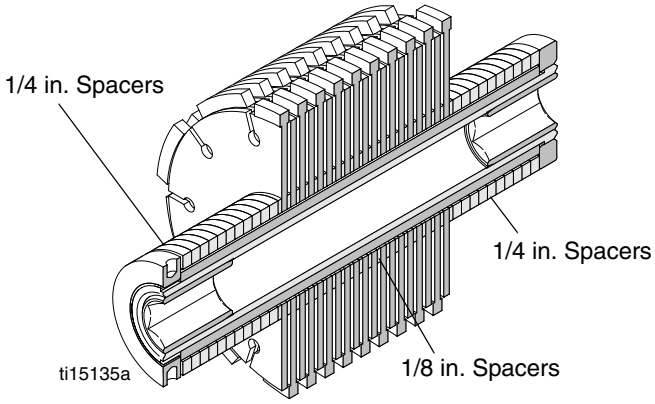


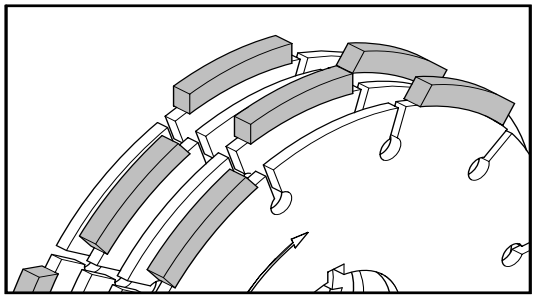
(M) Miller

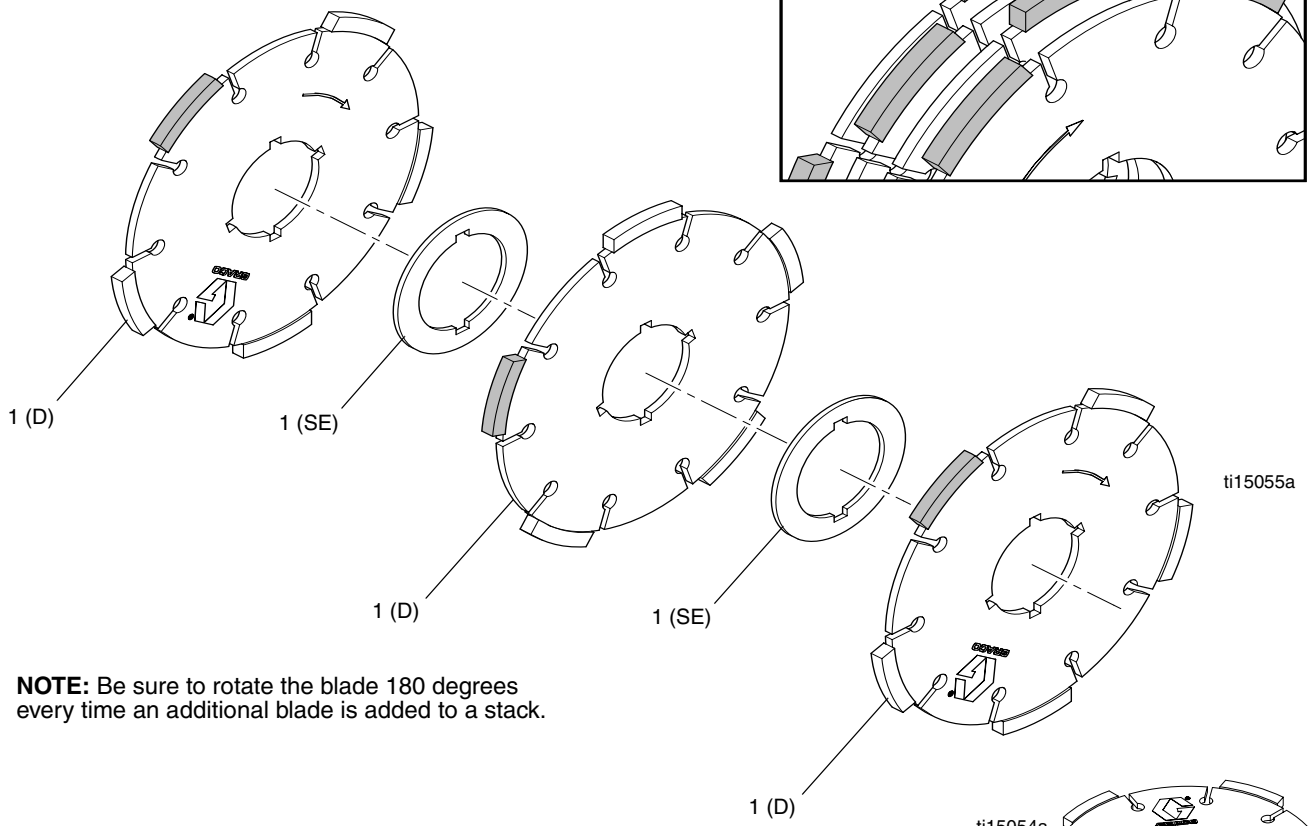
Diamond Blades

Groove Width	Number of Blades	Number of Steel 1/8 in. Spacers	Number of Aluminum 1/4 in. Spacers
1 in. (2.5 cm)	4	5	36
2 in. (5 cm)	8	9	32
3 in. (7.5 cm)	12	13	28
4 in. (10 cm)	16	17	23
5 in. (12.5 cm)	19	21	21
6 in. (15 cm)	23	24	15
7 in. (17.5 cm)	27	28	11
8 in. (20 cm)	31	32	7
9 in. (23 cm)	35	36	3
10 in. (25 cm)	38	39	2

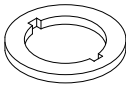
For best performance, use 1/4 in. spacers on each end of shaft to center diamond blades on drum.



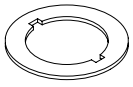




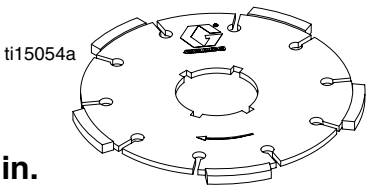
NOTE: Be sure to rotate the blade 180 degrees every time an additional blade is added to a stack.



(SQ) Spacer-1/4 in.

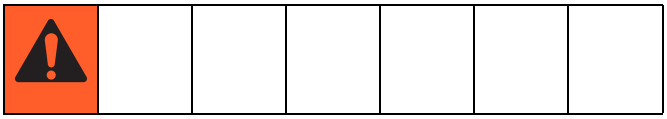


(SE) Spacer-1/8 in.



(D) Diamond Blade

Troubleshooting



Problem	Cause	Solution
Engine will not start	Engine switch is OFF.	Turn engine switch ON.
	Engine is out of gas.	Refill gas tank (see engine manual.
	Engine oil level is low.	Try to start engine. Fill oil is necessary (see engine manual).
	Spark plug cable is disconnected or damaged.	Connect spark plug cable or replace spark plug.
	Engine is cold.	Use engine choke.
	Fuel shutoff lever is in OFF position.	Move shutoff lever to ON position.
	Oil is seeping into combustion chamber.	Remove spark plug. Pull starter 3 or 4 times. Clean or replace spark plug. Start engine. Keep sprayer upright to avoid oil seepage.
	480 Models Only: Emergency shut-off switch is OFF.	Turn emergency shut-off switch ON.
	480 Models: Not attached to LineDriver.	Attach LineDriver to unit.
Engine operates, LineDriver will not move forward or reverse	Low hydraulic oil	Fill with Mobil 1 (15W-50) synthetic oil
	Wheel release is open	Close; hand tighten.
Engine operates, LineDriver moves slowly in forward or reverse	Low hydraulic oil. Parking brake is set.	Fill with Mobil (15W-050) synthetic oil. Release parking brake.
	Wheel release is open	Close; hand tighten.
Engine shuts off when operator exits LineDriver	Safety switch	Set parking brake
Engine continues to run when operator exits LineDriver and parking brake is not set	Safety switch	Adjust and set parking brake. Replace safety switch and/or any connecting wires.
Engine misses during turns and forward and reverse changes	Engine oil low	1. Consult engine manual for proper oil. 2. Keep engine oil full to avoid nuisance stalls caused by Oil Alert sensing low oil levels.
Uneven cut	Unbalanced tire pressure	Check tire pressure to make sure both tires are at 60 ft-lb.
Not cutting	Cutters are worn or damaged	Replace cutters.
Engine runs for short time and stops	Fuel flow restriction	See engine manual
Unit vibrates excessively	Cutters not centered on drum.	Reassemble drum with cutters centered on drum.
	Bearings are starting to wear out.	Replace bearings.
	Cutters are worn or damaged.	Replace cutters.
Groove is not even when using diamond blades	Drum rod is not level with drum adjustment wheels.	Adjust drum adjustment wheels so wheels and hex rod are level.
Engine bogs down while grinding	Depth of cut is too deep.	Raise drum.
	Unit is moving too fast.	Slow down.
Not removing material while cutting	Cutters are worn.	Replace cutters.

Technical Data

GrindLazer 270 (Model 571002)		
Dimensions		
	Unpackaged	**Packaged**
Height in./cm:	46 (116.8)	50.5 (128.3)
Width in./cm:	28 (71.1)	37 (94.0)
Length in.cm:	62 (157.5)	73 (185.4)
Weight lb/kg:	300 (136)	400 (181)
Noise (dBa)		
Sound Power per ISO 3744:	107.3	
Sound Pressure measured at 3.1 feet (1m):	91.6	
Vibration (m/sec^2) per ISO 3744		
Without LineDriver:	7.9	
With LineDriver:	8.3	
Power Rating (HorsePower) per SAE J1349		
8.0 @ 3600 rpm		

GrindLazer 390 (Model 571003)		
Dimensions		
	Unpackaged	**Packaged**
Height in./cm:	46 (116.8)	50.5 (128.3)
Width in./cm:	28 (71.1)	37 (94.0)
Length in.cm:	62 (157.5)	73 (185.4)
Weight lb/kg:	310 (141)	410 (186)
Noise (dBa)		
Sound Power per ISO 3744:	109.3	
Sound Pressure measured at 3.1 feet (1m):	93.6	
Vibration (m/sec^2) per ISO 3744		
Without LineDriver:	7.5	
With LineDriver:	5.9	
Power Rating (HorsePower) per SAE J1349		
11.0 @ 3600 rpm		

GrindLazer 480 (Model 571004)		
Dimensions		
	Unpackaged	**Packaged**
Height in./cm:	46 (116.8)	50.5 (128.3)
Width in./cm:	28 (71.1)	37 (94.0)
Length in.cm:	62 (157.5)	73 (185.4)
Weight lb/kg:	330 (150)	430 (195)
Noise (dBa)		
Sound Power per ISO 3744:	108.6	
Sound Pressure measured at 3.1 feet (1m):	92.1	
Vibration (m/sec^2) per ISO 3744		
With LineDriver:	4.9	
Power Rating (HorsePower) per SAE J1349		
16.0 @ 3600 rpm		

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 3A0102

Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

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